

first and second coupling members formed on the first and second objects, respectively, and defining spaced first and second loci, respectively, each of the first and second coupling members having a substantially smooth and unbroken part spherical outer surface formed of resilient radially compressible material;

5 a split arm assembly comprising relatively rigid arm sections operatively juxtaposed to one another along the line of juncture between the spaced loci;

the arm sections clamped together relatively crosswise the plane of the line of juncture in a plurality of clamped together positions;

operatively opposing first and second sockets formed at respective first and second end
10 portions of the arm sections, the first and second sockets having substantially smooth part spherical concave surfaces which substantially coincide with respective circles of revolution having respective centers essentially at the first locus and the second locus when the arm sections are in one of the plurality of clamped together positions;

a first clamped together position wherein the first sockets and the first coupling member
15 form a first relatively rotatable ball and socket joint having a first circle of revolution with its center at the first locus, and the second sockets and the second coupling member form a second relatively rotatable ball and socket joint having a second circle of revolution with its center at the second locus;

a second clamped together position having the first sockets positioned to radially
20 compress portions of the outer surface of the first coupling member and extrude between the first sockets portions of the outer surface of the first coupling member adjacent to the compressed portions and thereby interlock with the outer surface of the first coupling member, and having the second sockets and the second coupling member form a second relatively rotatable ball and socket joint; and

25 a third clamped together position having the first sockets positioned to radially compress portions of the outer surface of the first coupling member and extrude between the first sockets portions of the outer surface of the first coupling member adjacent to the compressed portions and thereby interlock with the outer surface of the first coupling member, and having the second sockets positioned to radially compress portions of the outer surface of

the second coupling member and extrude between the second sockets portions of the outer surface of the second coupling member adjacent to the compressed portions and thereby
interlock with the outer surface of the second coupling member.

39. (Once Amended) An interlocking ball and socket joint comprising:

5 a coupling member partially formed of a resilient deformable material in a substantially solid globular shape having an unconstrained diameter and substantially encompassing a mechanical core adapted to accept a mechanical attachment outside the unconstrained diameter;

10 a socket having first substantially opposing interior surfaces shaped to substantially conform to the substantially globular portion of the coupling member; and

an adjustable clamp disposed subsequently in a plurality of different adjustment relationships to the opposing concave socket surfaces,

15 one adjustment of the clamp conforming the first opposing interior socket surfaces in a relatively rotational relationship with the coupling member, wherein the opposing interior socket surfaces partially encompass a spherical volume having substantially the same diameter as the globular portion of the coupling member, whereby the socket and the coupling member are relatively rotatable, and

20 another adjustment of the clamp conforming the first opposing interior socket surfaces in an interlocking relationship with the coupling member, wherein the opposing interior socket surfaces partially encompass opposing spherical segments of the coupling member that are spaced apart a distance that, combined with a height of each of the opposing spherical segments, is less than the unconstrained diameter of the globular portion of the coupling member, whereby a first portion of the globular portion of the coupling member is compressed between the first opposing interior socket surfaces and a second portion of the globular portion
25 is expanded beyond the first opposing interior socket surfaces. ~~the socket deforms the coupling member and interlocks the socket and the coupling member in a relative angular orientation.~~

47. (Once Amended) An interlocking ball and socket joint comprising:

a coupling member having a radially compressible material formed in a substantially spherical shape having an uncompressed outer diameter and formed around a relatively rigid core having a projection extending outside of the unconstrained diameter;

5 a socket adapted to accept a mechanical attachment and comprising two or more substantially rigid socket members each having substantially smooth concave surfaces coextending with a portion of the uncompressed outer diameter of the spherical portion of the coupling member; and

10 an adjustable clamp mechanically attached to the socket members and subsequently positioning the socket members in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the socket members in an opposing relationship on either side of the coupling member and relatively rotatable thereto, and

15 another adjustment of the clamp positioning the socket members in an opposing relationship on either side of the coupling member and compressing the radially compressible material thereof, whereby the socket members substantially compress the coupling member therebetween and extrude a portion of the coupling member external to the socket members and thereby interlock the socket members with the coupling member in a relative angular orientation.

20 52. (Twice Amended) A method of forming a universally positionable device for fixing relative angular orientation between a ball and a socket, the method comprising:

mechanically fixing a substantially globular structure of sturdy but compressible material around a first end of a rigid mechanical structure having first and second ends;

adapting the second end of the rigid mechanical structure to accept a mechanical attachment thereto; and

25 disposing two opposing socket surfaces about the globular structure, the two opposing socket surfaces adapted for disposing in a first relatively rotational relationship thereto and a second angularly fixed relationship thereto, wherein a portion of the compressible material is

compressed between the two opposing socket surfaces and a portion of the compressible material is expanded outside of the two socket surfaces.

58. (Once Amended) ~~The method of claim of claim 57, wherein forming an artifact within an interior surface of at least one of the two opposing socket surfaces further comprises~~

5 A method of forming a universally positionable device for fixing relative angular orientation between a ball and a socket, the method comprising:

mechanically fixing a substantially globular structure of sturdy but compressible material around a first end of a rigid mechanical structure having first and second ends;

10 adapting the second end of the rigid mechanical structure to accept a mechanical attachment thereto; and

forming an indentation within the an interior surface of the at least one of two opposing socket surfaces and disposing the two opposing socket surfaces about the globular structure, the two opposing socket surfaces adapted for disposing in a first relatively rotational relationship thereto and a second angularly fixed relationship thereto, wherein the compressible
15 material is compressed between the two opposing socket surfaces.

60. (Once Amended) An interlocking ball and socket joint comprising:

a coupling member having a radially compressible material formed in a substantially unbroken spherical shape having an uncompressed outer diameter and formed around a relatively rigid core having a projection extending outside of the unconstrained diameter;

20 a socket adapted to accept a mechanical attachment and comprising two or more substantially rigid socket members each having substantially smooth concave surfaces coextending with a portion of the uncompressed outer diameter of the spherical portion of the coupling member, one of the smooth concave surfaces having a structure formed therein; and

25 an adjustable clamp mechanically attached to the socket members and subsequently positioning the socket members in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and relatively rotatable thereto, and

another adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and compressing a first portion of the radially compressible material thereof and extruding a second portion of the radially compressible material thereof, whereby the socket members ~~substantially compress the coupling member and~~ interlock the socket members with the coupling member in a relative angular orientation.

61. (Once Amended) ~~The interlocking ball and socket joint of claim 60, wherein the structure formed in the smooth, concave socket surface further comprises~~
An interlocking ball and socket joint comprising:
- 10 a coupling member having a radially compressible material formed in a substantially unbroken spherical shape having an uncompressed outer diameter and formed around a relatively rigid core having a projection extending outside of the unconstrained diameter;
a socket adapted to accept a mechanical attachment and comprising two or more substantially rigid socket members each having substantially smooth concave surfaces
- 15 coextending with a portion of the uncompressed outer diameter of the spherical portion of the coupling member, one of the smooth concave surfaces having an indentation formed therein;
and
an adjustable clamp mechanically attached to the socket members and subsequently positioning the socket members in a plurality of opposing relationships to one another,
- 20 one adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and relatively rotatable thereto, and
another adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and compressing the radially compressible material thereof, whereby the socket members substantially compress the coupling member and
- 25 interlock the socket members with the coupling member in a relative angular orientation.

REMARKS

Claims 1-61 remain in the case. Claims 1-37, 43, 50 and 59 have been allowed over the prior art. Claims 38-39, 47, 52, 58 and 60-61 are amended.

Clean Copy Incorporating Changes to Claims

38. (Once Amended) A mounting device for interposing along a line of juncture between a pair of relatively movable objects, the mounting device providing any of relative motion and fixed positions between the two objects at selected angular orientations, the
5 mounting device comprising:

first and second coupling members formed on the first and second objects, respectively, and defining spaced first and second loci, respectively, each of the first and second coupling members having a substantially smooth and unbroken part spherical outer surface formed of resilient radially compressible material;

10 a split arm assembly comprising relatively rigid arm sections operatively juxtaposed to one another along the line of juncture between the spaced loci;

the arm sections clamped together relatively crosswise the plane of the line of juncture in a plurality of clamped together positions;

operatively opposing first and second sockets formed at respective first and second end
15 portions of the arm sections, the first and second sockets having substantially smooth part spherical concave surfaces which substantially coincide with respective circles of revolution having respective centers essentially at the first locus and the second locus when the arm sections are in one of the plurality of clamped together positions;

a first clamped together position wherein the first sockets and the first coupling member
20 form a first relatively rotatable ball and socket joint having a first circle of revolution with its center at the first locus, and the second sockets and the second coupling member form a second relatively rotatable ball and socket joint having a second circle of revolution with its center at the second locus;

a second clamped together position having the first sockets positioned to radially
25 compress portions of the outer surface of the first coupling member and extrude between the first sockets portions of the outer surface of the first coupling member adjacent to the compressed portions and thereby interlock with the outer surface of the first coupling member, and having the second sockets and the second coupling member form a second relatively rotatable ball and socket joint; and

a third clamped together position having the first sockets positioned to radially compress portions of the outer surface of the first coupling member and extrude between the first sockets portions of the outer surface of the first coupling member adjacent to the compressed portions and thereby interlock with the outer surface of the first coupling member, and having the second sockets positioned to radially compress portions of the outer surface of the second coupling member and extrude between the second sockets portions of the outer surface of the second coupling member adjacent to the compressed portions and thereby interlock with the outer surface of the second coupling member.

39. (Once Amended) An interlocking ball and socket joint comprising:
a coupling member partially formed of a resilient deformable material in a substantially solid globular shape having an unconstrained diameter and substantially encompassing a mechanical core adapted to accept a mechanical attachment outside the unconstrained diameter;

a socket having first substantially opposing interior surfaces shaped to substantially conform to the substantially globular portion of the coupling member; and

an adjustable clamp disposed subsequently in a plurality of different adjustment relationships to the opposing concave socket surfaces,

one adjustment of the clamp conforming the first opposing interior socket surfaces in a relatively rotational relationship with the coupling member, wherein the opposing interior socket surfaces partially encompass a spherical volume having substantially the same diameter as the globular portion of the coupling member, whereby the socket and the coupling member are relatively rotatable, and

another adjustment of the clamp conforming the first opposing interior socket surfaces in an interlocking relationship with the coupling member, wherein the opposing interior socket surfaces partially encompass opposing spherical segments of the coupling member that are spaced apart a distance that, combined with a height of each of the opposing spherical segments, is less than the unconstrained diameter of the globular portion of the coupling member, whereby a first portion of the globular portion of the coupling member is compressed

between the first opposing interior socket surfaces and a second portion of the globular portion is expanded beyond the first opposing interior socket surfaces.

47. (Once Amended) An interlocking ball and socket joint comprising:

5 a coupling member having a radially compressible material formed in a substantially spherical shape having an uncompressed outer diameter and formed around a relatively rigid core having a projection extending outside of the unconstrained diameter;

a socket adapted to accept a mechanical attachment and comprising two or more substantially rigid socket members each having substantially smooth concave surfaces coextending with a portion of the uncompressed outer diameter of the spherical portion of the
10 coupling member; and

an adjustable clamp mechanically attached to the socket members and subsequently positioning the socket members in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the socket members in an opposing relationship on either side of the coupling member and relatively rotatable thereto, and

15 another adjustment of the clamp positioning the socket members in an opposing relationship on either side of the coupling member and compressing the radially compressible material thereof, whereby the socket members substantially compress the coupling member therebetween and extrude a portion of the coupling member external to the socket members and thereby interlock the socket members with the coupling member in a relative angular
20 orientation.

52. (Twice Amended) A method of forming a universally positionable device for fixing relative angular orientation between a ball and a socket, the method comprising:

mechanically fixing a substantially globular structure of sturdy but compressible material around a first end of a rigid mechanical structure having first and second ends;

25 adapting the second end of the rigid mechanical structure to accept a mechanical attachment thereto; and

disposing two opposing socket surfaces about the globular structure, the two opposing socket surfaces adapted for disposing in a first relatively rotational relationship thereto and a second angularly fixed relationship thereto, wherein a portion of the compressible material is compressed between the two opposing socket surfaces and a portion of the compressible material is expanded outside of the two socket surfaces.

58. (Once Amended) A method of forming a universally positionable device for fixing relative angular orientation between a ball and a socket, the method comprising:
mechanically fixing a substantially globular structure of sturdy but compressible material around a first end of a rigid mechanical structure having first and second ends;
10 adapting the second end of the rigid mechanical structure to accept a mechanical attachment thereto; and
forming an indentation within an interior surface of at least one of two opposing socket surfaces and disposing the two opposing socket surfaces about the globular structure, the two opposing socket surfaces adapted for disposing in a first relatively rotational relationship thereto and a second angularly fixed relationship thereto, wherein the compressible material is
15 compressed between the two opposing socket surfaces.

60. (Once Amended) An interlocking ball and socket joint comprising:
a coupling member having a radially compressible material formed in a substantially unbroken spherical shape having an uncompressed outer diameter and formed around a
20 relatively rigid core having a projection extending outside of the unconstrained diameter;
a socket adapted to accept a mechanical attachment and comprising two or more substantially rigid socket members each having substantially smooth concave surfaces coextending with a portion of the uncompressed outer diameter of the spherical portion of the coupling member, one of the smooth concave surfaces having a structure formed therein; and
25 an adjustable clamp mechanically attached to the socket members and subsequently positioning the socket members in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and relatively rotatable thereto, and

another adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and compressing a first portion of the
5 radially compressible material thereof and extruding a second portion of the radially compressible material thereof, whereby the socket members interlock with the coupling member in a relative angular orientation.

61. (Once Amended) An interlocking ball and socket joint comprising:

a coupling member having a radially compressible material formed in a substantially
10 unbroken spherical shape having an uncompressed outer diameter and formed around a relatively rigid core having a projection extending outside of the unconstrained diameter;

a socket adapted to accept a mechanical attachment and comprising two or more substantially rigid socket members each having substantially smooth concave surfaces coextending with a portion of the uncompressed outer diameter of the spherical portion of the
15 coupling member, one of the smooth concave surfaces having an indentation formed therein; and

an adjustable clamp mechanically attached to the socket members and subsequently positioning the socket members in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the socket members in a opposing
20 relationship on either side of the coupling member and relatively rotatable thereto, and

another adjustment of the clamp positioning the socket members in a opposing relationship on either side of the coupling member and compressing the radially compressible material thereof, whereby the socket members substantially compress the coupling member and interlock the socket members with the coupling member in a relative angular orientation.

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